

WHAT IS CLAIMED IS:

- (1) A manufacturing system comprising:
a discharger for discharging a liquid material having fluidity onto anything onto which the liquid material is to be discharged;
communication means for transmitting and receiving data through a communication line; and
monitoring means for monitoring the state of the discharger and for outputting data obtained by the monitoring through the communication means.
- (2) A manufacturing system according to Claim 1, wherein the monitoring means determines whether or not an abnormality has occurred based on the monitor data, and outputs a warning signal through the communication means when an abnormality has occurred.
- (3) A manufacturing system according to either Claim 1 or Claim 2, wherein, when the monitoring means receives a control command through the communication means, the monitoring means controls operation of the discharger in accordance with the control command.
- (4) A manufacturing system according to any one of

Claims 1 to 3, wherein the discharger comprises a liquid drop discharge head for discharging the liquid material, and a drive circuit for outputting a drive signal for controlling the discharging carried out by the liquid drop discharge head; and at least a drive signal input portion of the liquid drop discharge head and the drive circuit are shielded so as not to be accessible from the outside.

(5) A manufacturing system according to Claim 4, wherein the liquid drop discharge head is previously provided with a specific identification number, wherein the discharger further comprises mounting detecting means for detecting any mounting of the liquid drop discharge head, and wherein, when the monitoring means receives a detection signal from the mounting detecting means, the monitoring means reads and outputs the identification number.

(6) A manufacturing system according to either Claim 4 or Claim 5, wherein the discharger further comprises discharge failure detecting means for detecting the discharging of the liquid material from the liquid drop discharge head when the drive signal is input and for detecting a discharge failure of the liquid drop discharge head when the liquid material is not discharged, and wherein, when the monitoring means receives a detection

signal from the discharge failure detecting means, the monitoring means determines that an abnormality has occurred, and outputs a warning signal.

(7) A manufacturing system according to Claim 6, wherein, when the liquid drop discharge head comprises a plurality of nozzles for discharging the liquid material, the discharge failure detecting means is constructed so as to detect a discharge failure of each nozzle.

(8) A manufacturing system according to any one of Claims 4 to 7, wherein the discharger outputs a notification signal indicating the generation of a drive signal pulse, and the monitoring means outputs data for counting the cumulative number of dots discharged from the liquid drop discharge head based on the notification signal.

(9) A manufacturing system according to any one of Claims 4 to 8, wherein the discharger has the function of measuring an operable state time of the liquid drop discharge head, the operable state time including time for actually discharging the liquid material and time for maintaining the liquid material in a dischargeable state and waiting for the discharging operation, and the monitoring means obtains and outputs the measured operable state time.

(10) A manufacturing system according to any one of Claims 1 to 9, wherein the discharger has the function of counting the number of manufactured products, and the monitoring means outputs the count value.

(11) A manufacturing system according to any one of Claims 1 to 10, wherein the discharger further comprises a storage container for storing the liquid material, and remaining amount detecting means for detecting a predetermined remaining amount of liquid material in the storage container; and when the monitoring means receives a detection signal from the remaining amount detecting means, the monitoring means outputs a notification signal for notifying that the remaining amount of liquid material has decreased to the predetermined remaining amount.

(12) A manufacturing system according to any one of Claims 1 to 11, further comprising removal detecting means for detecting removal of any predetermined part in the discharger, wherein, when the monitoring means receives a detection signal from the removal detecting means, the monitoring means determines that an abnormality has occurred and outputs a warning signal.

(13) A controller comprising:

communication means for transmitting and receiving data through a communication line;

storage means for storing information of an agreement regarding a manufacturing device which is monitored; and

controlling means for controlling the maintenance and use of the manufacturing device based on the agreement information and monitor data by receiving the monitor data or a warning signal from the manufacturing device through the communication means, by updating monitor data regarding the manufacturing device using the received monitor data, and by recording the updated monitor data in the storage means; and for outputting data regarding the manufacturing device.

(14) A controller according to Claim 13, wherein the controlling means outputs a command for controlling the manufacturing device through the communication means based on the content of the monitor data or the warning signal.

(15) A controller according to either Claim 13 or Claim 14, wherein the controlling means computes a manufacturing device royalty based on the number of manufactured products obtained from the manufacturing device.

(16) A method for performing a controlling operation, comprising the steps of:

receiving monitor data or a warning signal through a communication line from a manufacturing device that is monitored;

updating and recording monitor data of the manufacturing device using the received monitor data;

controlling the maintenance and use of the manufacturing device based on information of an agreement regarding the manufacturing device which is previously recorded and the monitor data; and

outputting the data regarding the manufacturing device.

(17) A method for performing a controlling operation according to Claim 16, further comprising the step of outputting a command for controlling the manufacturing device through the communication line based on the content of the monitor data or the warning signal.

(18) A method for performing a controlling operation according to either Claim 16 or Claim 17, further comprising the step of computing a manufacturing device royalty based on the number of manufactured products obtained from the manufacturing device.

(19) A control program for directing a computer to execute the processes of:

receiving monitor data or a warning signal through a communication line from a manufacturing device that is monitored;

updating and recording monitor data of the manufacturing device using the received monitor data;

controlling the maintenance and use of the manufacturing device based on information of an agreement regarding the manufacturing device which is previously recorded and the monitor data; and

outputting the data regarding the manufacturing device.

(20) A control program according to Claim 19, further comprising the process of outputting a command for controlling the manufacturing device through the communication line based on the content of the monitor data or the warning signal.

(21) A control program according to either Claim 19 or Claim 20, further comprising the process of computing a manufacturing device royalty based on the number of manufactured products obtained from the manufacturing device.

(22) A controlling system that is formed by connecting a manufacturing system, which makes use of an inkjet method, of any one of Claims 1 to 12 and a controller of any one of Claims 13 to 15 to a communication network which provides a data transmittable communication line.